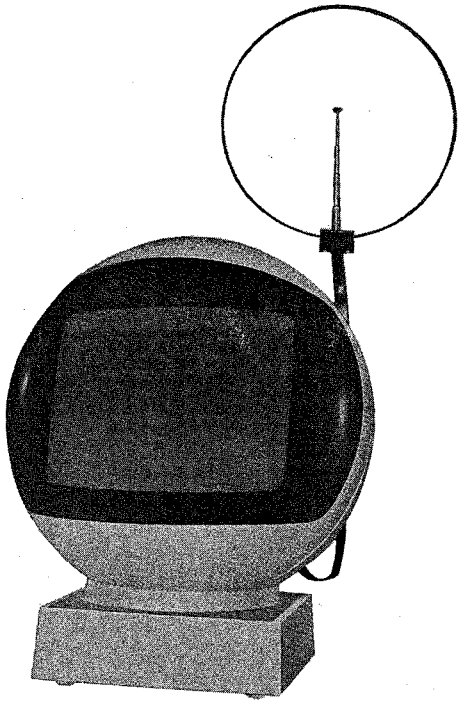
JVC
NIVICO

No. 3109

SERVICE MANUAL



MODEL 3240GM, 3240SW, 3240SC

B/W PORTABLE TELEVISION RECEIVER

DIMENSIONS : 28.5cm∅, 7.2cm HEIGHT (Base), 18.7cm□ (Base) WEIGHT : 5.2 kg

SPECIFICATIONS

Receiving Channel :	Channels 2 thru 12 VHF, 21 thru 69 UHF, CCIR standard
Antenna VHF :	Built in monopole antenna only for VHF, 75Ω unbalanced
	External antenna for VHF and UHF, 300Ω balanced
UHF :	Loop antenna for UHF, 300Ω balanced
Power Input Rating :	AC 220Volts 50Hz or 12Volts D. C.
Power Consumption :	AC 220Volts 50Hz 21Watts, 12Volts D. C. 11Watts
Fuse Device :	200mA slow blow type and 1.25A slow blow type
Speaker :	3″ Round type, voice coil impedance 16Ω
Audio Power Output :	500mW
Picture Tube :	9 inch 90° deflection aluminized
Transistors :	26pcs
Diodes :	17pcs
Cabinet :	Plastics

VICTOR COMPANY OF JAPAN, LIMITED.

SERVICING IN THE FIELD

CLEANING THE CABINET

Clean the external appearance of cabinet body and the stand when necessary, using a clean soft cloth with mild soap. Don't use any solution which contains benzine or petroleum.

RASTER CENTERING

The centering device is 2 magnetic rings located on yoke rear cover. By alternately rotating those 2 magnetic rings, the picture can be properly centered on the screen.

DEFLECTION YOKE ADJUSTMENT

If the lines of the raster are not horizontal or corner shadows appear, loosen the yoke clamp screw and rotate deflection yoke, pushing yoke snug up against bell of picture tube.

VERTICAL HEIGHT AND VERTICAL LINEALITY ADJUSTMENTS

When the upper or lower part of picture extends or shrinks, adjust the Vertical Height and Vertical Lineality controls alternately to fill the screen ¼ inch beyond the mask until the picture on test pattern is symmetrical from top to Bottom. The Height control extends (or shrinks) mainly a lower part of raster, and the lineality control a upper part.

B VOLTAGE (12V) ADJUSTMENT

Be sure to maintain at 220V, 50Hz power supply.
Then adjust the 12V control (R510) at D. C. 12 volts on B line.

AGC ADJUSTMENT

Adjust the AGC control when picture is a very slight bend at it's top, or excessive snow.
AGC may be adjusted by tuning control fully counter-clockwise then clockwise until there is a very slight bend, then turn control counter-clockwise just sufficiently to remove the bend.

DISASSEMBLY INSTRUCTIONS

REAR COVER REMOVAL

1. Remove 2 screws on rear cover (Fig. 1) and 5 screws fastening the edge of rear cover (Fig. 2).
2. Pulling a rear cover a little, disconnect two transmitting leads connected to antenna terminals and speaker leads in rear cover.

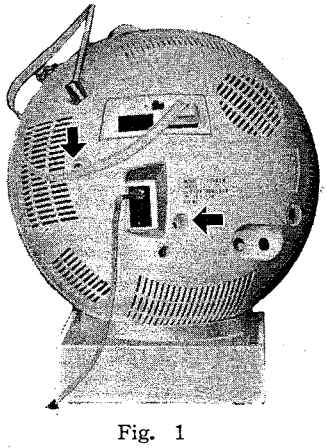


Fig. 1

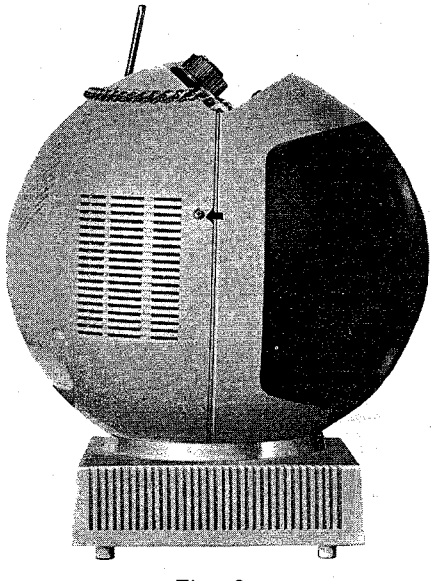


Fig. 2

TUNER REMOVAL

1. Remove rear cover. refer to "Rear Cover Removal".
2. Remove VHF and UHF selector knobs and VHF and UHF fine tuning knobs.
3. Remove 3 arrow head screws indicated in Fig. 3.

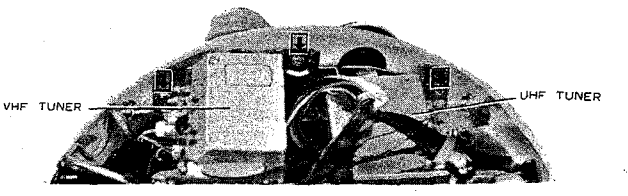


Fig. 3

FRONT PANEL REMOVAL

All parts except tuner bracket in a front panel (namely a body) are fastened up CRT holder or utilizing it. and so, it can removed all parts from body by removing a tuner bracket and CRT holder.

1. Remove rear cover. refer to "Rear Cover Removal".
2. Remove tuner bracket. refer to "Tuner Removal".
3. Remove 4 screws fastening CRT holder (Fig. 5). Take out the all parts contained CRT with both hands by having the CRT face all together from the Printed Circuit Board on right hand and the heat sink board on left hand. Fig. 4 is the photo removed all parts from front panel.

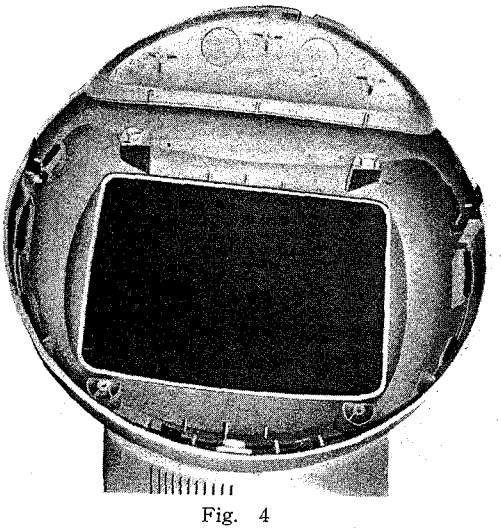


Fig. 4

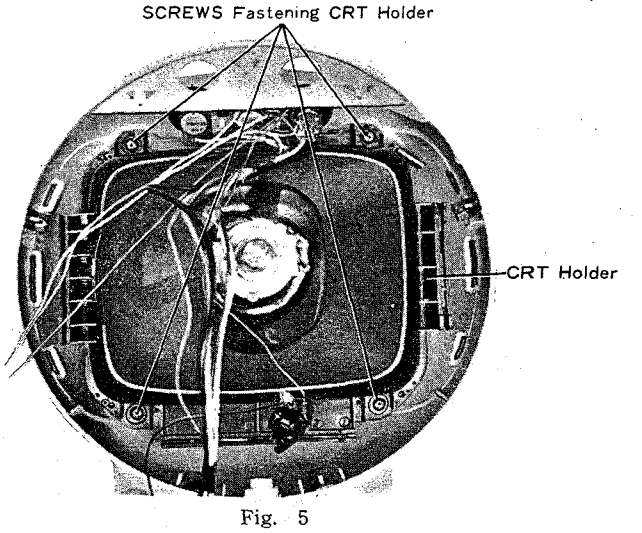


Fig. 5

PRINTED CIRCUIT BOARD AND HEAT SINK BOARD REMOVAL

1. Remove rear cover. refer to "Rear Cover Removal".
2. In case of Printed Circuit Board "A" (Fig. 6). Remove an arrow head screws and disconnect spring indicated in Fig. 6. and pull off Printed Circuit Board.

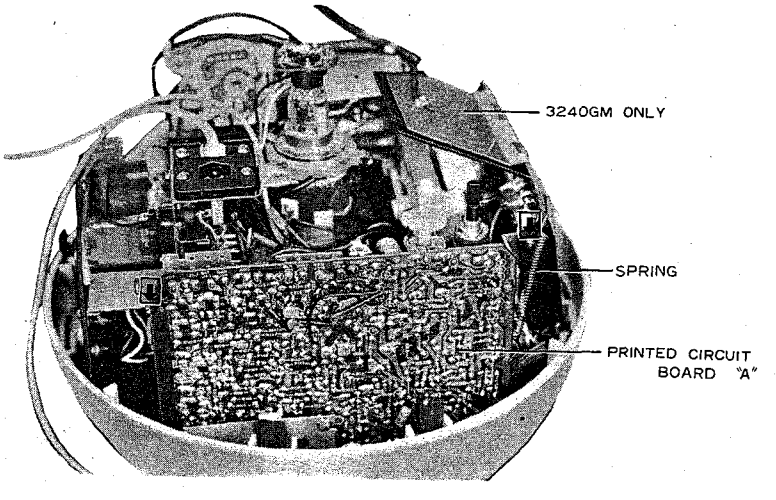


Fig. 6

In case of Printed Circuit Board "B" (Fig. 7).
Remove two screws and disconnect two springs indicated in Fig. 7. and pull off Printed Circuit Board.

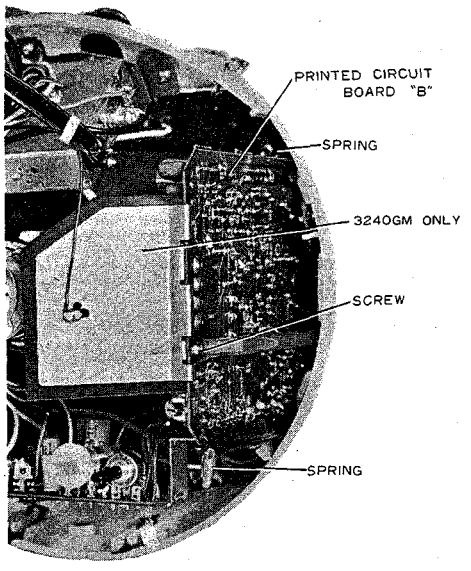


Fig. 7

In case of Heat Sink Board (Fig. 8).
Remove three screws, and pull off Heat Sink Board. refer to Fig. 8.

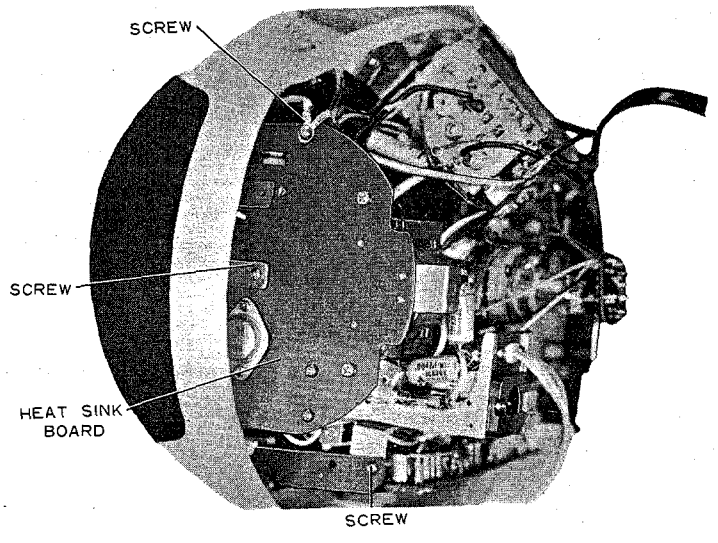


Fig. 8

CRT REMOVAL

Refer to "Front Panel Removal".

ALIGNMENT INSTRUCTIONS

PRE-ALIGNMENT

Use of an isolation transformer to protect the test equipments is recommended.

Keep the main voltage at 220 volts and allow 10-minutes warm-up period for the receiver and the test equipments.

PIX IF ALIGNMENT

TEST EQUIPMENTS

a. Sweep generator

b. Marker generator

c. Oscilloscope

d. 2~4 Volts Battery (for AGC)

PREPARATION BEFOR ALIGNMENT

Connect the synchronized sweep voltage from the sweep generator to the horizontal input of oscilloscope for horizontal deflection.

Set the channel selector to any non-interfering channel, connect a BIAS supply (3 volts) to the IF AGC line TP-3, and adjust the IF transformer in chart 1 to obtain a response curve.

PIX IF ALIGNMENT PROCEDURE

Step	Sweep Generator Coupling to	Oscilloscope Coupling to	Marker Generator Frequency	Adjustment	Marker Position	Wave Form
1	TP-2	TP-4	36.7 MHz	L105	MAX.	Fig. 9A
2	TP-2	TP-4	34.4 MHz	T101	60~80%	Fig. 9A
			36.7 MHz	T101	Center	
			38.9 MHz		60~80%	
3	TP-1 on VHF tuner	TP-4	40.4 MHz	L102	MIN.	Fig. 9B
			33.4 MHz	L103	MIN.	
			36.7 MHz	L104	MAX.	
4	〃	〃		L59 (Tuner) L101	MAX.	Fig. 9B
REMARK	Through 2000pF capacitor	Through 15KΩ resistor				

chart 1

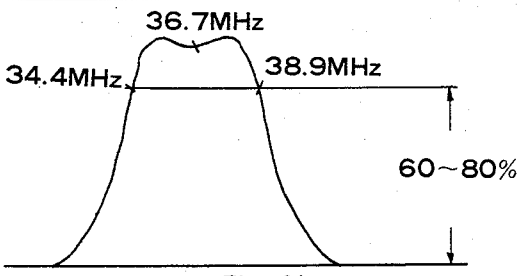


Fig. 9A

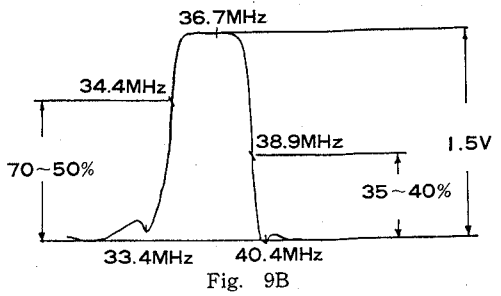


Fig. 9B

As to marker positions of 36.7MHz on each wave form, please refer to PIX IF alignment procedure table.

SOUND IF ALIGNMENT

TEST EQUIPMENTS

a. 5.5MHz Oscillator

b. V. T. V. M. with RF probe

SOUND IF ALIGNMENT PROCEDURE

STEP	Oscillator coupling to	V. T. V. M. coupling to	Adjustment	V. T. V. M. reading
1	TP-4	TP-5	T103	MAX.
2	TP-4	TP-5	T201 (pink core)	MAX.
3	TP-4	TP-6	T201 (black core)	Zero

MECHANICAL PART'S DIAGRAM

(Replacement Service Parts)

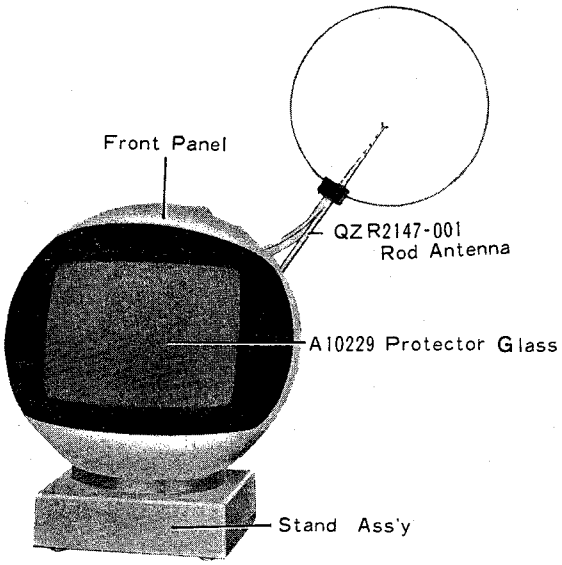


Fig. 10

Front Panel & Stand

Color	Model Name	Front Panel Part's No.	Stand Part's No.
White	3240GM, 3240SW, 3240SC	A10227-AS	A20684-00A
Red-Orange	3240GM	A10227-CS	A20684-00C
Gray	3240GM	A10227-00F	A20684-00F
Orange	3240GM, 3240SW, 3240SC	A10227-00E	A20684-00E

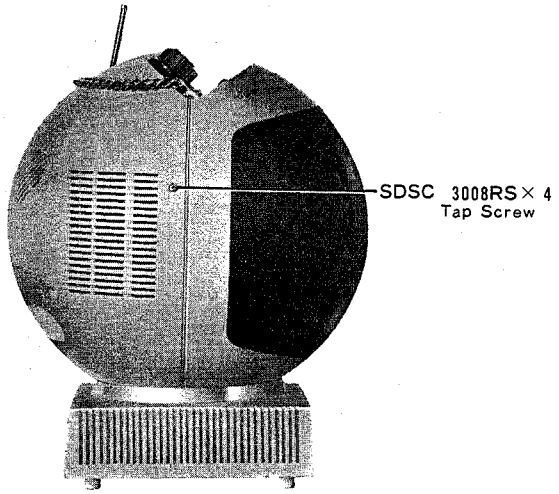


Fig. 11

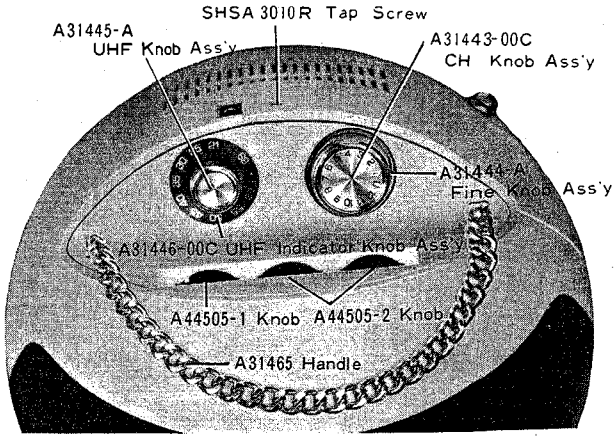


Fig. 12

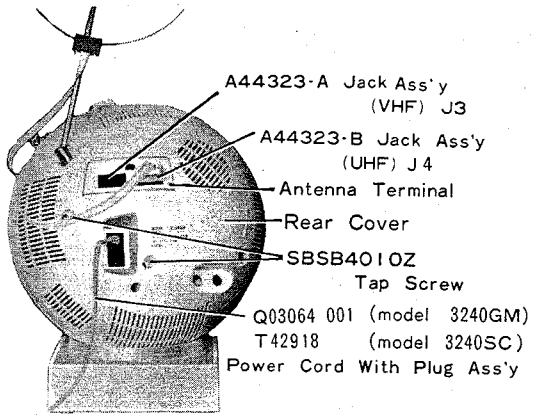


Fig. 13

Antenna Terminal & Rear Cover

Color	Model Name	Ant. Terminal Part's No.	Rear Cover Part's No.
White	3240GM, 3240SW, 3240SC	A31521-001	A10228
Red-Orange	3240GM	A31521-003	A10228-3
Gray	3240GM	A31521-005	A10228-006
Orange	3240GM, 3240SW, 3240SC	A31521-004	A10228-005

MECHANICAL PART'S DIAGRAM

(Replacement Service Parts)

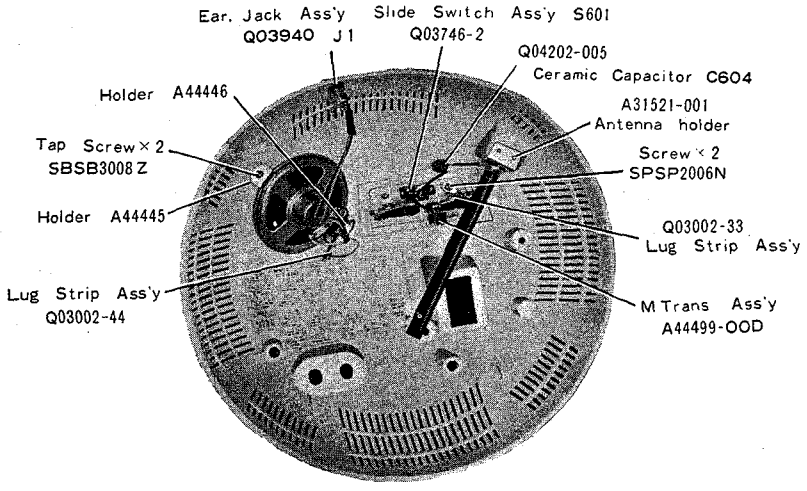


Fig. 14

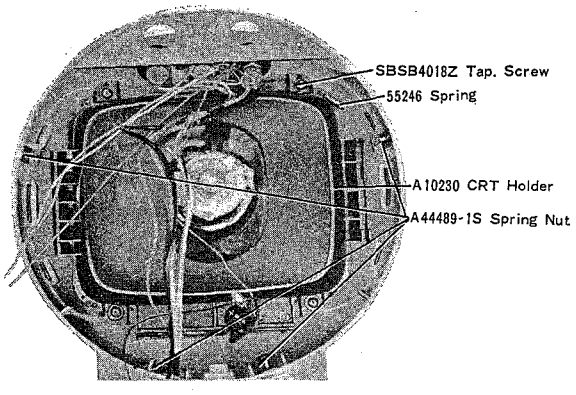


Fig. 15

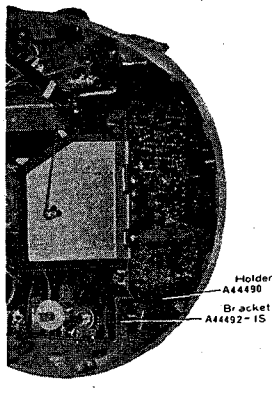


Fig. 16

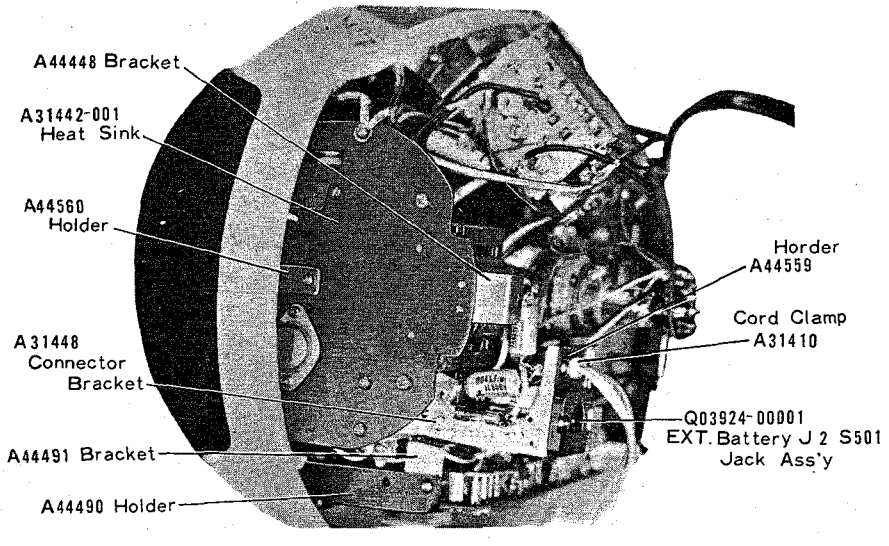


Fig 17

BLOCK DIAGRAM

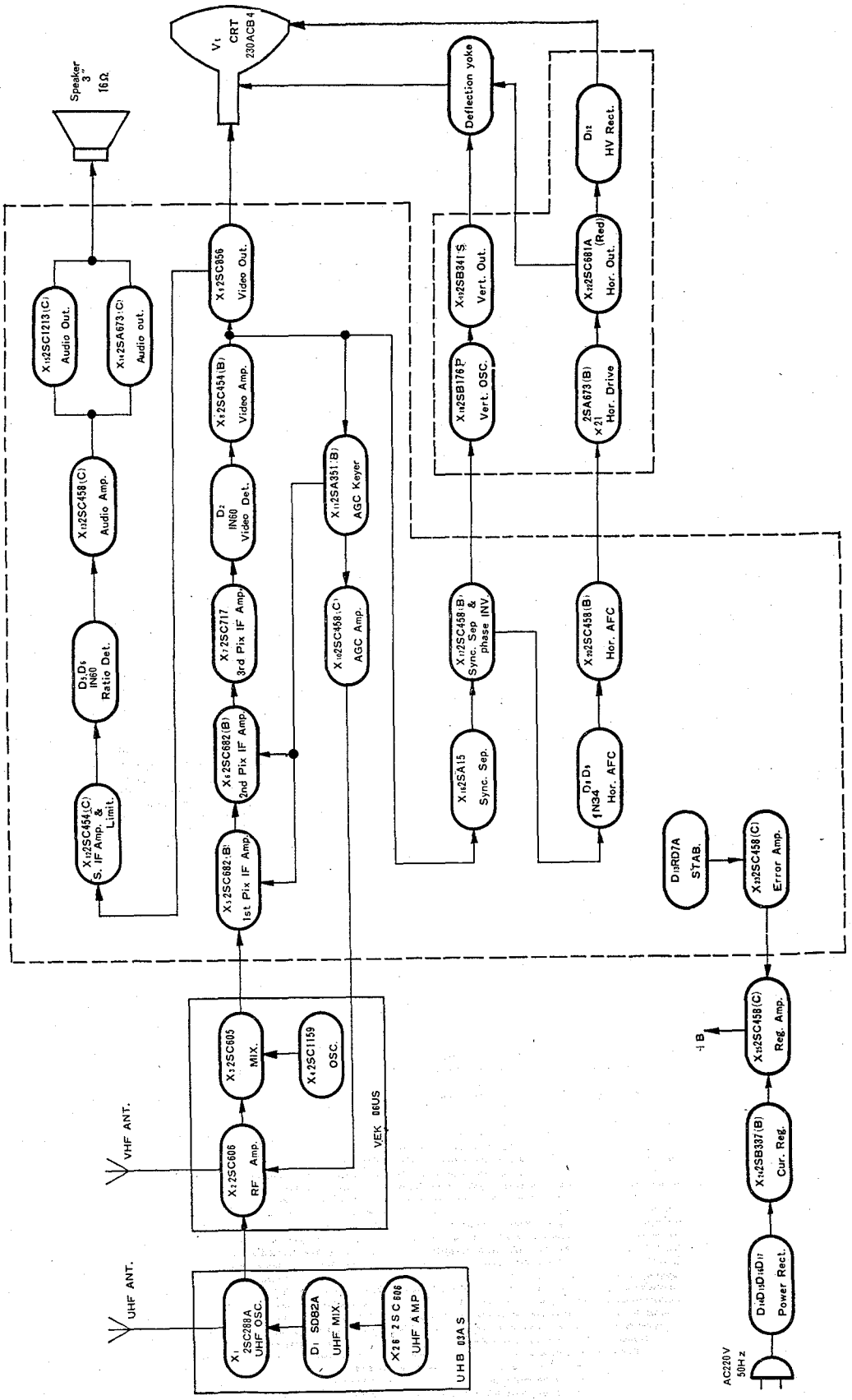


Fig. 18

PARTS ARRANGEMENT ON THE REAR OF PRINTED CIRCUIT BOARD

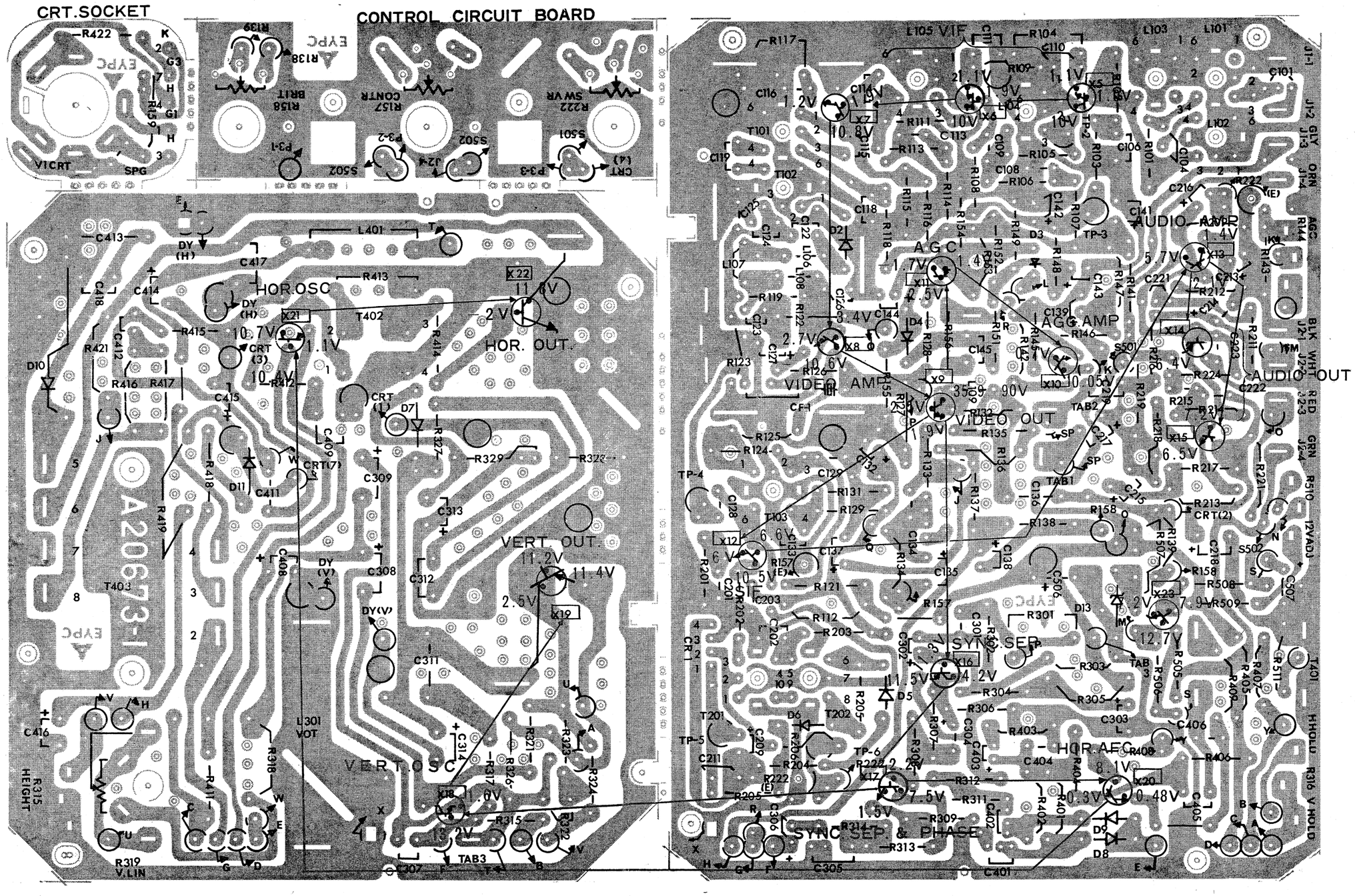
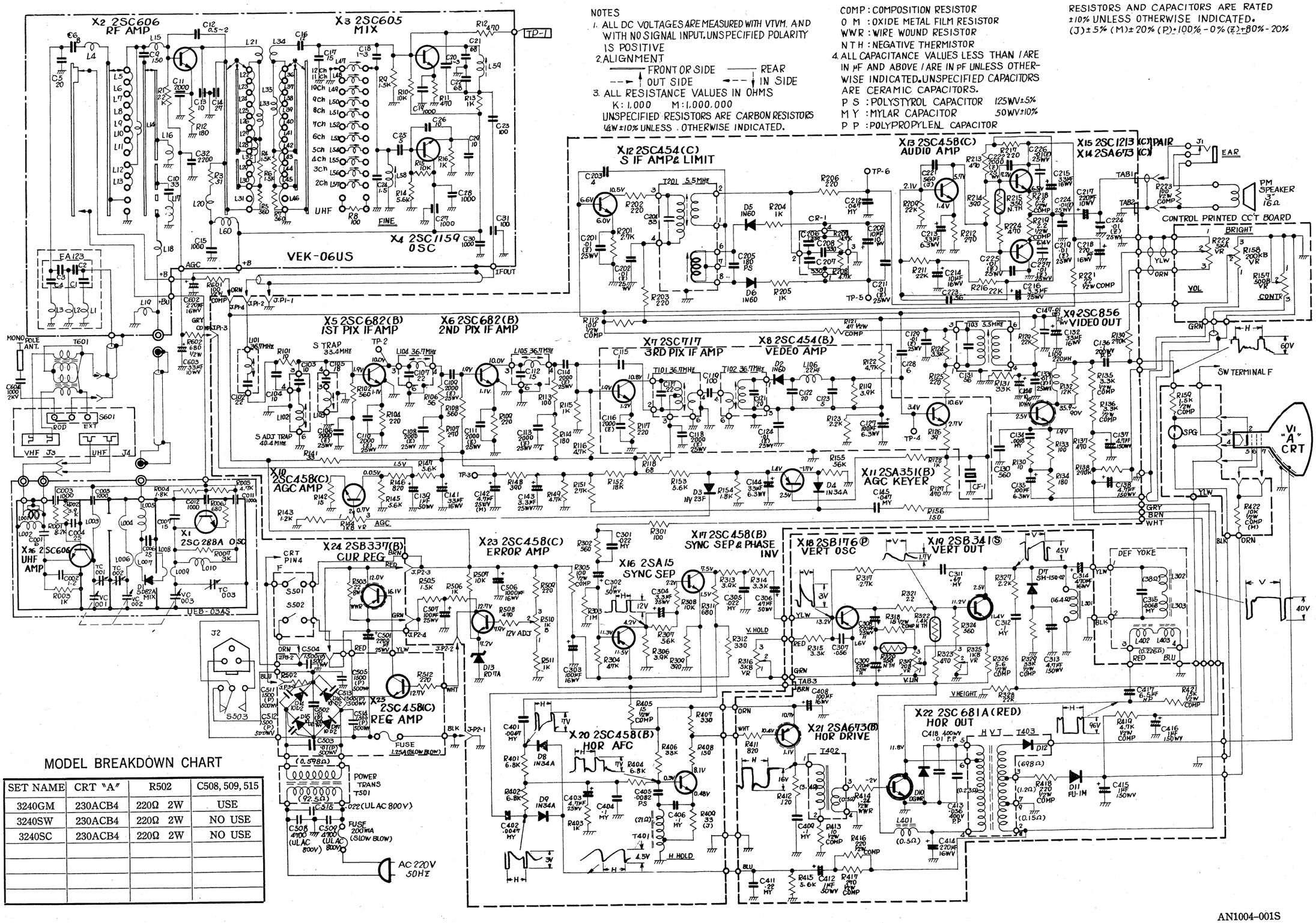


Fig. 19

TELEVISION SCHEMATIC DIAGRAM



NOTES

1. ALL DC VOLTAGES ARE MEASURED WITH VTVM. AND WITH NO SIGNAL INPUT. UNSPECIFIED POLARITY IS POSITIVE
2. ALIGNMENT
   ——— FRONT OR SIDE ——— REAR
   - - - ↑ OUT SIDE ← - - - ↓ IN SIDE
3. ALL RESISTANCE VALUES IN OHMS
   K: 1,000 M: 1,000,000
   UNSPECIFIED RESISTORS ARE CARBON RESISTORS 1/4W ±10% UNLESS . OTHERWISE INDICATED.
4. ALL CAPACITANCE VALUES LESS THAN 1 ARE IN μF AND ABOVE 1 ARE IN pF UNLESS OTHERWISE INDICATED. UNSPECIFIED CAPACITORS ARE CERAMIC CAPACITORS.

COMP : COMPOSITION RESISTOR
O M : OXIDE METAL FILM RESISTOR
WWR : WIRE WOUND RESISTOR
N T H : NEGATIVE THERMISTOR
P S : POLYSTYROL CAPACITOR 125WV±5%
M Y : MYLAR CAPACITOR 50WV±10%
P P : POLYPROPYLEN CAPACITOR

RESISTORS AND CAPACITORS ARE RATED ±10% UNLESS OTHERWISE INDICATED.
(J)±5% (M)±20% (P)+100% -0% (Z)+80% -20%

MODEL BREAKDOWN CHART

SET NAME	CRT "A"	R502	C508, 509, 515
3240GM	230ACB4	220Ω 2W	USE
3240SW	230ACB4	220Ω 2W	NO USE
3240SC	230ACB4	220Ω 2W	NO USE

AN1004-001S
Printed in Japan

Electronic Part's List

(Replacement Service Parts)

Transistors & Diodes

Part's No.	Part's Name	Symbol No.
2SC288A	Transistor	X1
2SC606	〃	X2
2SC605	〃	X3
2SC1159	〃	X4
2SC682(B)	〃	X5, 6
2SC717	〃	X7
2SC454(B)	〃	X8
2SC856	〃	X9
2SC458(C)	〃	X10, 13, 23
2SA351(B)	〃	X11
2SC454(C)	〃	X12
2SA673(C) } Pair	〃	X14
2SC1213(C) } Pair	〃	X15
2SA15	〃	X16
2SC458(B)	〃	X17, 20
2SB176Ⓟ	〃	X18
2SB341VⓈ	〃	X19
2SA673(B)	〃	X21
2SC681A(RED)	〃	X22
2SB337(B)	〃	X24
2SC458(C)	〃	X23, 25
SD82A	Diode	D1
1N60	〃	D2
HV23F	〃	D3
1N34A	〃	D4, 8, 9
1N60(Pair)	〃	D5, 6
A04093-X	〃	D7
A04230-A	〃	D10
A04241-A	〃	D11
A04332-007	〃	D13
A04331-021	〃	D14, 15, 16, 17

C R T

230ACB4	CRT	V1

Coils & Transformers

A31477-BZS	Def, Yoke Ass'y	
A44579	Trap Coil Ass'y	L102, C103
A44580	〃	L103, C105
A04317-B	Hor. Osc. Coil Ass'y	T401
A44383-B	Vert. Out. Coil Ass'y	L301
A42079	Choke Coil	L401
A04096-22	Peaking Coil	L106
〃 -220	〃	L109
A44499-00D	M. Trans. Ass'y	T601
A44517	Power Trans. Ass'y	T501
A44581	Pix IF Trans. Ass'y	L101, C102
A44582	〃	L104, C107
A44583	〃	L105, C112
A44584	〃	T101, C117
A44585	〃	T102, C121
A44586	Sound IF Trans. Ass'y	T103, C131
A44587	Ratio Trans. Ass'y	T201,202,C204
A42131-A	Hor. Drive Trans. Ass'y	T402
A31478-A	HV. Trans. Ass'y	T403, D12
A44624-001	Choke Coil	L601 (3240GM only)

Sockets (Connectors)

Q03940	Ear. Jack Ass'y	J1
Q03924-001	Ext. Battery Jack	J2, S503
A44397-B	CRT Socket Ass'y	V1

Variable Resistors

Q04832-010	V. Resistor (SW-VOL)	R222, S501,502
Q04828-003	〃 (CONT)	R157
Q04836-003	〃 (BRIGHT)	R158
Q04843-3	〃 (AGC. HEIGHT)	R144, 325
〃 -2	〃 (12V ADJ.)	R510
Q04871-1	〃 (V. LIN.)	R319
Q04832-011	〃 (V. HOLD)	R316

Resistors (Power & Special)

Q04784-22	Wire Wound Resistor	R503
Q04772-220	Oxide Metal Resistor	R502
A03008-5	CR Block	R207, 208 C206,207,208
QRW121J-R24	Wire Wound Resistor	R414
A04292-4	Negative Thermistor	R215
A04292-005	〃	R322
〃 -006	〃	R320

Electrolytic Capacitors

Q03107-200	Elect Capacitor	C602
Q03105-30	〃	C603
〃 -10	〃	C146
Q03582-11	〃	C501
Q03104-30	〃	C144, 213
〃 -100	〃	C127, 135
Q03106-10	〃	C209
〃 -200	〃	C217
Q03122-220	〃	C308, 309
Q03108-10	〃	C214
〃 -30	〃	C132, 141, 215
〃 -100	〃	C303, 408
〃 -200	〃	C218, 414
〃 -500	〃	C314
〃 -1000	〃	C506
Q03110-3	〃	C143, 216, 304
〃 -5	〃	C142, 403
〃 -100	〃	C507
Q03112-0.5	〃	C306
〃 -1	〃	C139, 302, 412
Q03152-1	〃	C415, 416
〃 -5	〃	C137, 138, 313
A03054-655	N. P. Elect. Capacitor	C417

Part's No.	Part's Name	Symbol No.
Capacitors		
Q04335-1	Fixed Ceramic Capacitor	C115
〃 -4	〃	C203
〃 -6	〃	C128
〃 -10	〃	C104
〃 -20	〃	C122
〃 -47	〃	C101
〃 -100	〃	C119
Q04062-2000	〃	C106,108,109, 110,111,113, 114,116,118, 222
〃 -01	〃	C124.129,133, 201,202,211, 219,226,227
Q42309-01	〃	C502, 503
Q03254-182	Mylar Capacitor	C134
〃 -472	〃	C401, 402
Q03254-223	〃	C301, 305
〃 -473	〃	C145, 212
〃 -104	〃	C312, 404, 406 409
〃 -224	〃	C411
〃 -474	〃	C311
〃 -563	〃	C307
QFS22BJ-181	Polystyrol Capacitor	C205
Q03269-822	〃	C405
Q03214-104	Polypropylene Capacitor	C136
Q03215-563	〃	C413
〃 -103	〃	C418

Part's No.	Part's Name	Symbol No.
Speaker		
AD2455	Speaker	
Tuners		
VEK-06US	VHF Tuner	
UEB-03AS	UHF Tuner	
Miscellaneous		
QMF51A2-1R2	Fuse (1.25A Slow Blow)	
Q04742-0.2	Fuse (200mA Slow Blow)	
A30665-A	Earphone Plug Ass'y	
A31284-C	UHF loop Antenna Ass'y	
QZR2147-001	Rod Antenna	
A04237-1	Spark gap	
A04318	Core Driver (for Hor. Osc Coil)	
AP2328-002	Packing Case 3240GM	
AP2328-005	〃 3240SC	
AP2328-004	〃 3240SW	
Wiring		
Q03064-001	Power Cord With Plug (3240GM)	
T42918	〃 (3240SC)	

ACCESSORIES

	Q'ty
Earphone Plug Ass'y	1
UHF loop Antenna Ass'y	1
Instruction Card	1
Schematic Diagram	1

Requirement to Customers

◎ **For the purpose of prompt supply of service parts, inscribe parts number, parts name, and model name correctly when you order.**

MANUFACTURED by

VICTOR COMPANY OF JAPAN, LIMITED.

Printed in Japan
— 4611 — 0 —